ARGUMENT

Claims 1-8 remain pending in the application of which Claims 1 and 3-8 have been amended. New Claims 9-20 have been added.

The Examiner has rejected independent Claim 1 under 35 U.S.C. 102(b) as being anticipated separately by either Ferguson (USP 1,585,969) or Reichman (USP 4,624,327). Applicant traverses these rejections on the grounds that neither cited reference shows each and every element of the limitations set forth in Applicant's Claim 1.

As an initial comment, Applicant's inventive concept is the balancing of drilling/return fluid in a wellbore utilizing a second fluid of ***greater*** density injected into the wellbore ***over or above*** the drilling/return fluid. The greater density fluid forms a fluid column over the less dense drilling/return fluid, thereby applying pressure to the drilling/return fluid and hence, "balancing" the wellbore. In essence, two fluid columns are formed in the wellbore. A first fluid column formed of the less dense fluid, i.e., the drilling/return mud, is formed in the ***lower*** portion of the wellbore, i.e., the uncased production zone, while a second fluid column formed of the higher density fluid is formed in the ***upper*** portion of the wellbore, i.e., the cased portion of the wellbore, ***above*** the first fluid column. Of significance is the injection point for these fluids. The denser fluid is injected ***at a location removed from the bottom end of the wellbore*** (generally in the cased portion of the wellbore), while the less dense fluid is injected ***at the bottom*** of the wellbore (typically considered the uncased or "production zone" of the wellbore). *See* Page 15, ¶2-3, Page 18, ¶2-3 and Figs. 1, 2, 4 and 5 illustrating wellbore 40 having casing 50 extending to a location above the "production zone". In this way, the heavy over light fluid columns are formed. None of the prior art references teach such a system as is explained in more detail below.

It should further be noted that to the extent prior art references teach the injection of a ***lighter, less dense*** fluid into a wellbore (such as for example, to facilitate "lift"), then such references do not anticipate Applicant's invention which focuses on the injection of a ***heavier, more dense*** fluid into the wellbore.

Turning to Ferguson, the reference teaches the use of a "drilling circulation" and a "sustaining circulation" in the wellbore. Page 2, Lines 11-14; 27-30. The "drilling circulation" may

employ mud, water oil or other fluid. Page 2, Lines 26-27. The "sustaining circulation" is a "very heavy mud or in some cases a heavy crude oil." Page 2, Lines 39-40. The drilling circulation is used to carry away chips or cuttings from the drill bit. Page 2, Lines 2, 6. The sustaining circulation is used to support the walls of the well. Page 2, Line 7. It "muds off the formations through which the well passes, serving to hold back any fluids in these formations and to prevent caving." Page 2, Lines 44-47. Significantly, both fluids are delivered ***to the bottom of the wellbore*** and injected ***at the bottom of the wellbore*** in the production zone below the cased section of the hole. At Page 2, Line 16, Ferguson teaches that the drilling circulation is delivered "to the bottom of the hole." Likewise, at Page 2, Line 33, Ferguson teaches that the sustaining circulation is delivered "at the bottom of the hole." The delivery of both fluids to the bottom of the hole is logical based on the reason that two separate fluids are utilized by Ferguson. In order to "mud off the formation" along the entire wellbore, the sustaining fluid must be delivered at the bottom of the hole—it clearly would not be delivered to a cased section of the hole. This teaching of Ferguson is further supported by Figs. 1 and 3 of Ferguson. In Fig. 1, the drilling circulation is delivered via drill pipe 21, through water passage 34 of drill bit 30. The end of drill string 21 and drill bit 30 are positioned in the bottom of the wellbore in the uncased production zone. Likewise, the sustaining circulation is delivered through casing 13, which is shown in the Figures as extending to the bottom of the wellbore adjacent drill bit 30. Notably, pipe casing 11 used to case the wellbore clearly extends down the wellbore only a portion of the length of the wellbore. Both fluids are introduced into the uncased portion of the wellbore below pipe casing 11.

In contrast to Ferguson, Applicant delivers separate fluids to two separate locations in the wellbore, wherein said locations are removed from one another. Drilling fluid, i.e., mud, is delivered to the bottom of the wellbore—the production zone or uncased section of the wellbore—in the standard and well-known manner. However, the heavier, more dense "balancing" fluid is delivered to a location in the wellbore that is higher up in the wellbore and removed from the bottom of the wellbore. Typically this location is somewhere in the cased portion of the wellbore. It is the delivery of this heavier, more dense fluid to a distinct location above the bottom of the wellbore that permits the formation of the two fluid columns in the wellbore. For these reasons, Ferguson does not anticipate each and every element of Applicant's Claim 1, and the Examiner is respectfully requested to withdraw this rejection.

With respect to Reichman, two fluids are again delivered to the bottom of the wellbore, as is best illustrated in Fig. 2. Both fluids are discharged through drill bit 32. The first fluid is standard drilling mud which is pumped into drill string 10 via hose 22. The second fluid is high pressure jet fluid which is pumped into drill string 10 via hose 24. Reichman teaches that drill bit 32 is a "conventional drag bit 32 which has been modified to receive fluid jet nozzles to provide jet assisted mechanical drilling." Col. 7, lines 18-20. The high pressure fluid is specifically delivered to the bottom of the wellbore via high pressure conduit 60 which is "manifolded at bit 32." Col. 7, line 35. Thus, clearly this "jet" fluid is delivered to the bottom of the wellbore. The other fluid, namely standard drilling mud, is likewise delivered to the bottom of the wellbore since it is used in the conventional manner. At Col. 6, line 20, Reichman clearly teaches that the drilling mud mixes with the high pressure fluid "at the bottom of the well."

Reichman, therefore, can be distinguished from Applicant's claims on two separate bases. First, both fluids in Reichman are delivered to the ***bottom of the well***. Second, nowhere in Reicman is it taught that the high pressure jet fluid has a greater density than the drilling mud. In fact, in order for this second fluid of Reicman to be placed under "pressure" and function as "jet fluid" ***it must be less dense that the drilling mud***. This is exactly opposite from the fluid compositions claimed in Applicant's invention. Specifically, in Applicant's invention, the "second fluid" is a higher density fluid used to apply pressure to the lower density drilling mud. For these reasons, Reichman does not anticipate each and every element of Applicant's Claim 1, and the Examiner is respectfully requested to withdraw this rejection.

Applicant has added new Claims 9-20 which includes independent Claims 9 and 19. For the reasons set forth above, none of the cited references anticipate these new claims. Further, these new claims, as well as all amendments set forth herein, find support in the original specification as referenced above.

Applicant has amended the claims to clarify the structure of the invention and to clarify the functions of the claimed invention. However, amendments have not been made to narrow the claims of the original application but, rather simply, to clarify claims due to grammar that the Examiner found unclear.

Based on the foregoing, the Examiner is respectfully requested to withdraw the rejections of independent Claim 1 and pass this claim to allowance. Likewise, since each independent claim is allowable, the Examiner is respectfully requested to pass all dependent claims to allowance as well.

If the Examiner feels that a telephone conference with the undersigned would be helpful to the allowance of this application, a telephone conference is respectfully requested.

Respectfully submitted,
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Renee Treider

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